



# **Information Technology Infrastructure Committee (ITIC) Report to NAC**

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# OUTLINE

- ◆ **Terms of Reference**
- ◆ **Committee Members**
- ◆ **Initial Meeting (telecon) – 2/11/10**
- ◆ **Cyber security**
- ◆ **IT Infrastructure**
- ◆ **Committee Potential Work Plan**
- ◆ **Questions/Comments**

# Terms of Reference (TOR)



- ◆ **The Information Technology Infrastructure Committee is a standing committee of the NASA Advisory Council, supporting advisory needs of the NASA Administrator, the Office of the Chief Information Officer, and other NASA Mission Directorates as required.**
- ◆ **The scope of the Committee includes all NASA information technology infrastructure-related programs, projects, activities, and facilities-including high performance computing.**

# Committee Members



## ◆ Membership

- Mr. Albert (Al) Edmonds (Chair), President - Edmonds Enterprise Services, Inc.
- Mr. Alan Paller, Research Director - SANS Institute
- Mr. Robert Grossman, Professor – University of Illinois
- Mr. David Waltz, Director – Columbia University
- Mr. Larry Smarr, Director – California Institute for Telecommunications and Information Technology
- Mr. Charles Holmes, Retired – NASA
- Ms. Debra Chrapaty, Senior VP – CISCO
- Mr. Alexander Szalay, Professor – Johns Hopkins University
- Mr. Alexander H. Levis, Professor - George Mason University
  
- Ms. Tereda J. Frazier (Exec Sec), Special Assist. to CIO, NASA



# INITIAL MEETING

## ◆ The first meeting of the committee was held on

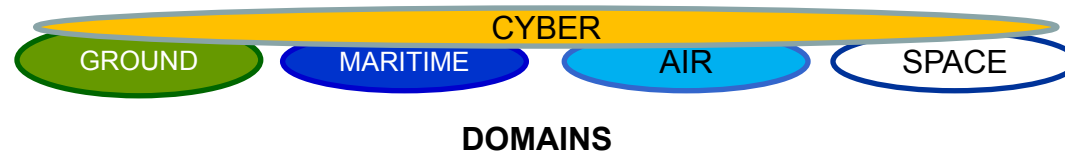
- February 11<sup>th</sup>, 2010
- Telecon – 11:00 to 1:00pm

## ◆ The objectives of the meeting were:

- Introductions
- Primary & Secondary Committee Focus Interests
- Committee Responsibilities & Processes
- NASA's IT Infrastructure Overview
- Develop Work Plan for the first year
- Logistics for future meetings

# CONTESTED CYBER ENVIRONMENT

- ◆ **Contested Cyber Environment:** Circumstance in which one or more adversaries attempt to change the outcome of a mission by denying, degrading, destroying our cyber capabilities, or by altering the usage, product, or our confidence in those capabilities.

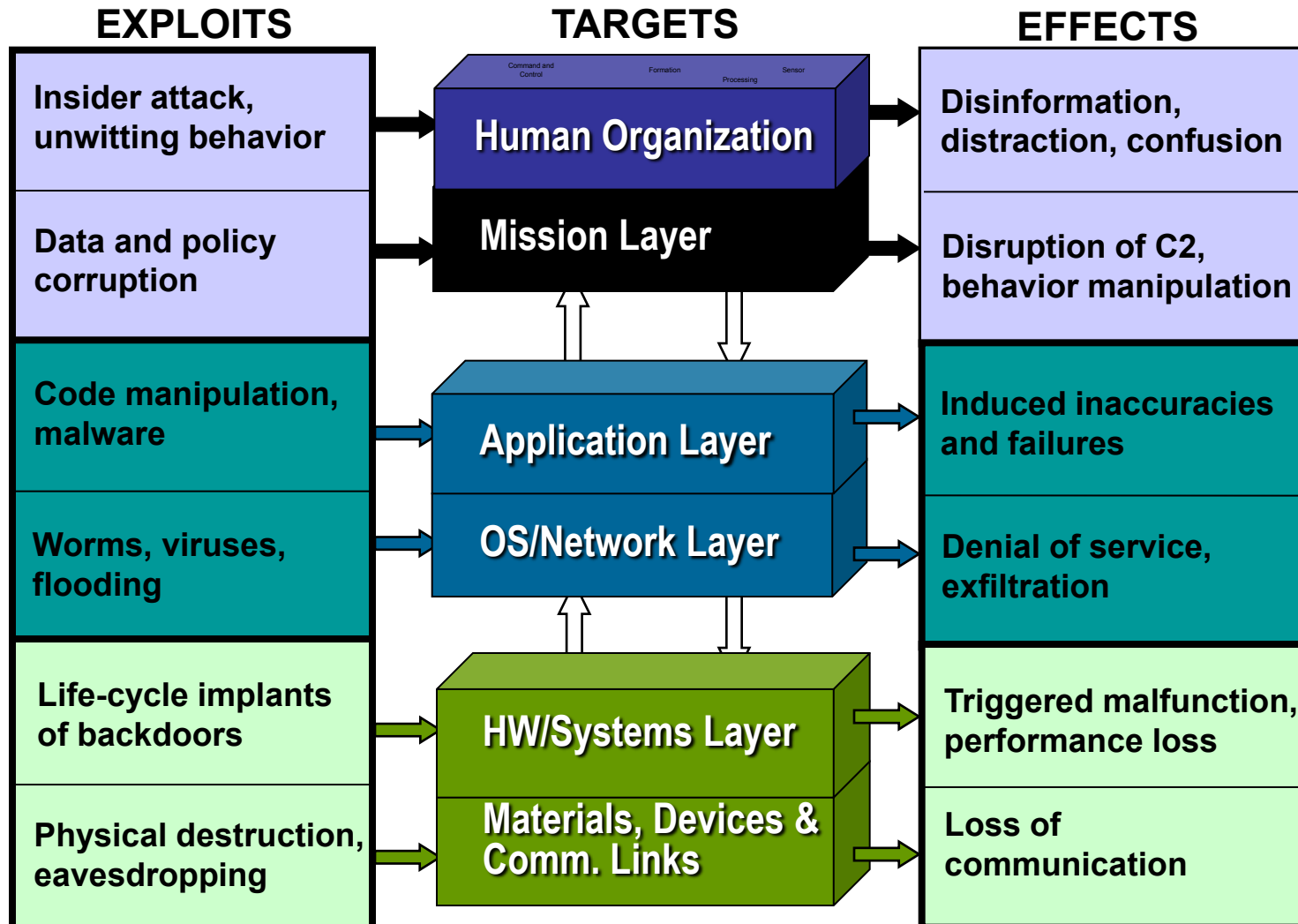


NASA operates in all five domains

- ◆ **Information Assurance:** Measures that protect and defend information and information systems.
- ◆ **Mission Assurance:** Measures required to accomplish essential objectives of missions in a contested environment.

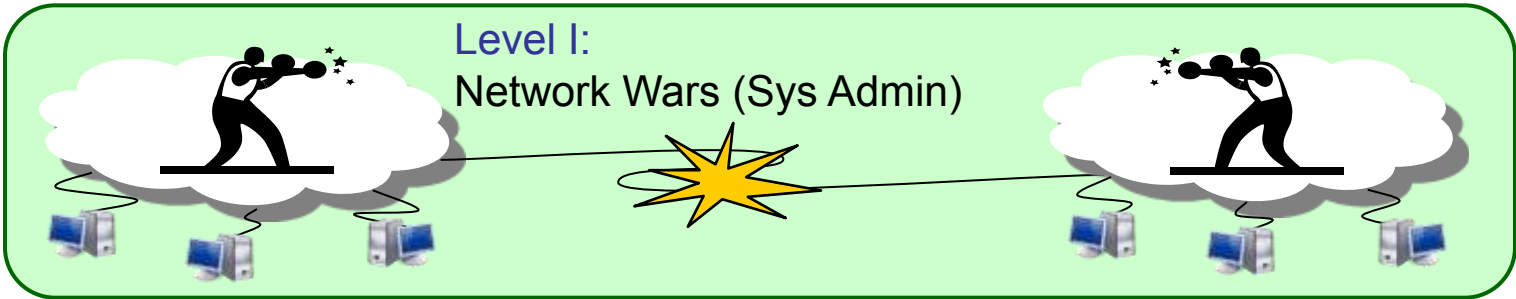
**Information Assurance is necessary but  
not sufficient for Mission Assurance**

# THE ELEMENTS OF THE CONTESTED CYBER ENVIRONMENT



# CYBER EXPLOIT LEVELS

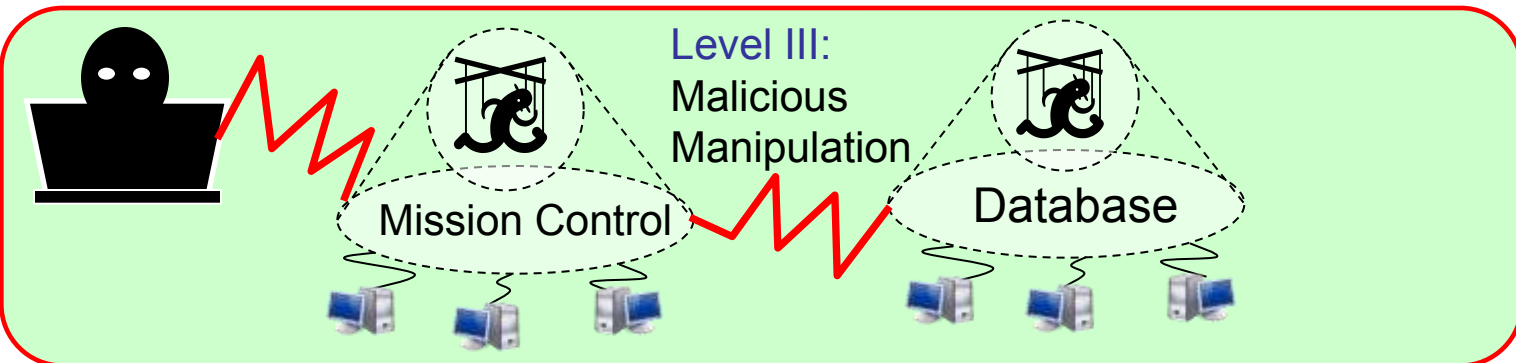
I



II



III





## ◆ IT Challenges

- Software challenges
  - Lack of consistent enterprise solutions
  - Maturing Application Portfolio Management
- IT Security challenges
  - Software assurance does not include comprehensive IT security
  - IT Security risks to the mission is not fully understood
- Major user challenges
  - Inconsistent user experience across NASA
  - Balancing usability with information security risk mitigation
  - New tools and technologies take a long time to reach users

# Potential Work Plan



- ◆ **Marry the IT infrastructure and cyber security efforts immediately**
- ◆ **Make NASA IT infrastructure the greenest in government**
- ◆ **Benchmark NASA's cyber security practices**
- ◆ **Seamless infrastructure (ground/spaceflight network)**
- ◆ **Management of NASA's IT infrastructure**

# Questions or Comments

